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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,049	07/18/2001	Suresh Katukam	CISCP694	8487
26541	7590	03/16/2005	EXAMINER	
RITTER, LANG & KAPLAN 12930 SARATOGA AE. SUITE D1 SARATOGA, CA 95070			CHEA, PHILIP J	
			ART UNIT	PAPER NUMBER
			2153	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/909,049

Applicant(s)

KATUKAM ET AL.

Examiner

Philip J Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

This action is in response to an Amendment filed October 21, 2004. Claims 1-38 are presented for further consideration of which claims 35-38 are new.

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 8/19/2004 was filed after the mailing date of 8/24/2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

2. Figures 1a-2b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. Examiners objection has been overcome by Applicant's amendment.

### ***Specification***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because:

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- Note line 1, language should not repeat information given in the title and avoid using phrases such as "disclosed".

Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

- Note page 6 line 15, "of" is apparently "or".
- Note page 8 line 22, "as not be" is apparently "as not being" or "as not to be".
- Note page 16 line 1, "past" is apparently "path".

Appropriate correction is required.

Examiners objections have been overcome by Applicant's amendment.

#### ***Claim Objections***

7. Claim 34 objected to because of the following informalities:

- Note the phrase "computer program product" is used in line 1, whereas claim 31 on which it depends recites the phrase "a method" in line 1.
- Note line 1, "claim 31" is apparently "claim 33".

Appropriate correction is required.

8. Examiners objection has been overcome by Applicant's amendment.

#### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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10. Claims 1-3, 5, 7-14, 17, 19, 21-24, 28-30, 33, 35-38 rejected under 35 U.S.C. 102(e) as being anticipated by Allen (U.S. 2001/0032271).

As per claims 1, 12, 19, 24, 28, and 33, Allen discloses a system for computing paths between a first node and a second node within a network (see column 9, lines 21-23, where optical network is implied), as claimed, comprising:

- a route generator being arranged to generate a primary circuit path between the first node and the second node, the primary path including a first element selected from the plurality of elements (see paragraphs [0025-0026], where primary path is considered working path, and first node is considered originating node, and second node is considered destination node); and
- a list mechanism being arranged to identify the first element, wherein the route generator is further arranged to generate an alternate circuit path between the first node and the second node using the list mechanism, wherein the alternate circuit path does not include the first element identified by the list mechanism and a failure of the first element does not affect generating the alternate circuit path (see paragraphs [0037-0038]).

As per claims 2, 13, and 29, Allen discloses a system, as claimed, wherein the first element is a link (see paragraphs [0025-0026], and Fig. 1, where links are used to connect between the originating node and the destination node).

As per claims 3, 14, and 30, Allen discloses a system, as claimed, wherein the first element is a node (see paragraphs [0025-0026]).

As per claim 5, Allen discloses a system, as claimed, wherein the route generator is arranged to generate the primary circuit path that includes the first element and a set of elements (see paragraphs [0025-0026]), and the list mechanism is arranged to identify the first element and the set of elements as being inaccessible for use in generating the alternate circuit path (see paragraphs [0037-0038]).

As per claim 7, Allen discloses a system, as claimed, wherein the route generator is arranged to accept an input to specify a nodal diverse constraint or a link diverse constraint for the alternate circuit path (see paragraphs [0037-0038]).

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As per claim 8, Allen discloses a system, as claimed, wherein when the input specifies the nodal diverse constraint, the first element is a node (see paragraphs [0037-0038]).

As per claim 9, Allen discloses a system, as claimed, wherein when the input specifies the link diverse constraint, the first element is a link (see paragraphs [0037-0038], where nodes are separated by links).

As per claim 10, Allen discloses a system, as claimed, wherein the device is associated with the first node (see paragraph [0021]).

As per claim 11, Allen discloses a system, as claimed, wherein the route generator is further arranged to implement the primary circuit and the alternate circuit path (see paragraphs [0025-0026] and paragraphs [0037-0038], where it is implied the circuits are implemented once the routing decisions are made).

As per claim 17, Allen discloses a system, as claimed, further including means for creating a list including an identifier which identifies the first element as being inaccessible for use as a part of the alternate path (see paragraph [0039]).

As per claim 21, Allen discloses a system, as claimed, wherein the element described in claim 19 is a source node (see paragraph [0022]).

As per claim 22, Allen discloses a system, as claimed, wherein route generator identifies a first link to place in the list (see paragraph [0039]).

As per claim 23, Allen discloses identifiers that are arranged to identify the selected links included in the plurality of links and to place the plurality of identifiers that are arranged to identify the selected links included in the plurality of links in the list [see paragraph [0039]).

As per claim 35, Allen discloses a device for computing circuit paths between a first node and a second node within a network, the network including a plurality of elements, the device comprising:

- a route generator being arranged to generate a primary circuit path between the first node and the second node, the primary circuit path including a first element selected from the plurality of elements, the primary circuit path being generated as a part of a protected

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circuit path which includes the primary circuit path and the alternate circuit path (see paragraphs [0025-0026] for primary circuit path and paragraphs [0037-0038] for alternate circuit paths). ; and

- a list mechanism, the list mechanism being arranged to identify the first element, wherein the route generator is further arranged to generate the alternate circuit path between the first node and the second node using the list mechanism, the primary circuit path and the alternate circuit path both being implemented within the network, wherein the alternate circuit path does not include the first element identified by the list mechanism (see paragraphs [0037-0038]).

As per claim 36, Allen further discloses that the first element is operational when the primary circuit path and the alternate circuit path are created within the network (see paragraphs [0025-0026] and paragraphs [0037-0038], where paths are created while no failure has occurred yet).

As per claim 37, Allen further discloses that the route generator is arranged to generate the primary circuit path and the alternate circuit path as nodal diverse paths in which the primary circuit path and the alternate circuit path have substantially no common nodes between the first node and the second node, and wherein when the primary circuit path and the alternate circuit path are the nodal diverse paths, the first element is a node (see paragraphs [0037-0039]).

As per claim 38, Allen further discloses that the route generator is arranged to generate the primary circuit path and the alternate circuit path as link diverse circuit paths in which the primary circuit path and the alternate circuit path share substantially no links between the first node and the second node, and wherein when the primary circuit path and the alternate circuit path are the link diverse circuit paths, and the first element is a link (see paragraphs [0037-0039]).

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4, 6, 16, 18, 20, 25-27, 32, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Allen as applied to claims 1, 5, 12, 17, 19, 23, 24, 28, and 33 above, and further in view of Fahim et al. (U.S. 5,459,716).

As per claims 4, 16, 18, 20, 25, 32, and 34 although the system disclosed by Allen shows substantial features of the claimed invention (discussed above), it fails to disclose a protected link, and means for identifying the protected link as being inaccessible to the alternate path.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Allen, as evidenced by Fahim et al.

In an analogous art, Fahim et al. discloses a system having a plurality of nodes connected by protected links (spare edges = protected links), where alternate routes are found [Figure 7 (204-212)], and not used in the alternate path (see column 11, lines 5-45, where action edges, which do not include protected links, are used for alternate path routing).

Given the teaching of Fahim et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Allen by employing alternate path routing which avoids protected links, such as disclosed by Fahim et al., in order to determine the most cost effective alternate route to implement according to the commodity cost factors (see column 10, lines 20-38).

As per claim 26, Allen further disclose an element applied to claim 23 above as a source node (see column 7, lines 46-60, where transporting data implies the node being a source to another object on the network).

As per claim 27, Allen further disclose an element applied to claim 23 above to place the first identifier that identifies the first node in the list (see columns 7 and 8, lines 65-67 and 1-12, where failure types can be links or nodes and the implied list is used to remember the location and type of failure).



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13. Claims 15 and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Allen as applied to claims 12 and 30 above, and further in view of Swallow (U.S. 6,751,190). Although the system disclosed by Allen shows substantial features of the claimed invention (discussed above), it fails to disclose a means for identifying a tunnel in the primary circuit path and means for identifying the first element as being included in the tunnel.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Allen, as evidenced by Swallow.

In an analogous art, Swallow discloses a communications tunnel comprising a plurality of elements [Figure 1] where a first element included in the tunnel is identified as not being accessible by the alternate route (see column 3, lines 9-40, where the bypass tunnel (128) is used that does not include the first element (106)).

Given the teaching of Swallow, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Allen by employing a tunnel bypassing system, such as disclosed by Swallow, in order to give support for realtime data transfer which might implement in-order delivery of packets using a tunnel (see Swallow column 1, lines 47-67).

### ***Response to Arguments***

14. See above in the respective sections for response to Drawings, Specification and Claim Objections.

15. Applicant's arguments with respect to claim 1, 12, 19, 24, 28, 33, have been considered but are moot in view of the new ground(s) of rejection.

(I) Applicant contends that Azuma teaches that an alternate path for a telecommunications path is computed only after a node or a link failure. Applicant further shows that the claimed invention generates the alternate circuit path regardless of the status of the first element.

In considering (I), the amended claims have overcome the basis of rejection presented with Azuma. However, new grounds of rejection provided by Allen shows creating subsequent paths that are

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not common to the initial paths and that a failure does not affect generating the alternate circuit path (see grounds for new rejection above).

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 7:00-4:30 (1st Friday Off).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Philip J Chea  
Examiner  
Art Unit 2153

PJC 3/3/05



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